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DEVELOPMENT OF ATLAS MEDIA CONSTRUCTIVISM ORIENTED IN PLANT ANATOMY SUBJECT: PRACTICALITY TESTS

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Abstract:
Plant anatomy is the knowledge that can reveal everything related to the inside of plants, including inter-cell relations, cell functions and tasks as the constituent body of living things and other cell functions. Based on observations that researchers have conducted on the subjects of plant anatomy, there are several problems, namely that students are unable to describe and understand the structure of the tissue that composes plant organs. Students still use simple media in lectures. During the practicum students still use monocular and binocular microscopes, so that the observations do not match the original picture. Therefore has developed atlas media constructivism oriented in the Plant Anatomy subject. Atlas media development oriented constructivism uses a model of four-D models with stages that define, design, develop and disseminate. In this research, the development phase is the practicality stage by the lecturer. The results showed that the atlas media constructivism oriented in the Plant Anatomy subject was practically used by lecturers and students.

Keywords: atlas media, constructivism, plant anatomy, practicality

1. Introduction

Plant anatomy is the knowledge that can reveal everything related to the inside of plants, such as cell relations, cell functions and tasks as body constituents living things and other cell functions (Hidayat, 1995). Based on observations that researchers have conducted on the subjects of plant anatomy, there are several problems, namely that students are unable to describe and understand the structure of the tissue that composes plant organs. Students still use simple media in lectures. During the practicum students still use monocular and binocular microscopes, so that the

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observations do not match the original picture. Therefore, the atlas has developed constructivism oriented media in the course of Plant Anatomy.

Education media plays an important role in the learning process. The use of educational media can help lecturers in delivering the lecture material. Learning success is determined by two main components, namely the method of teaching and learning media (Ramdhani and Muhammadyah, 2015). Lecturers should use a constructivism approach and motivate students to be able to learn according to their characteristics (Ramansyah, 2013). Plant anatomy atlas media oriented constructivism can visualize material so that students can learn independently and can build their own knowledge by being directly involved in the learning process. The purpose of this study was to develop practical plant anatomy media atlas in the Plant Anatomy subject.

2. Methods

Development of media atlas constructivism oriented in the Plant Anatomy subject using four-D models with stages that define, design, development and disseminate (Trianto, 2010). In this research, the develop phase is the practicality stage by lecturers and students. The stages in this study are:

1. Practicality test, this test is done by filling out the practicality questionnaire by lecturers and students. The practicality test steps by the lecturer:
   - explain how to fill out the questionnaire;
   - giving atlas media to the lecturer;
   - giving instructions on how to use the media to;
   - learn and understand the concepts of atlas media;
   - lecturer fill out the questionnaire.
2. The practicality of test steps by the students:
   - Explains how to fill in a questionnaire;
   - giving the atlas media to the students;
   - give instructions on how to use the atlas media;
   - students learn and understand the concepts contained in the atlas media;
   - students fill out a questionnaire.
3. Scoring practicalities by:

$$\text{Practical value} = \frac{Skor\ rata}{Skor\ maksimum}\ x\ 100$$

Providing practicality assessment by using the criteria proposed by Riduwan (2008) modified:

90 - 100% = Very practical
80 - 89% = Practical
65 - 79% = Quite practical
50 - 64 % = Less practical

3. Results and Discussion

Data on the use of the Plant Anatomy Atlas was obtained through a questionnaire filled by 3 lecturers of plant anatomy courses (Table 1).

Table 1: Assessment of Wear Constructivism-Oriented Atlas by Lecturers

No	Item	1	2	3	Number of	Average
1	Atlas can be used at any time so as to facilitate students in the process of learning	4	4	4	12	4
2	Learning by using atlas makes it easy for students to understand the interrelation of concepts	3	3	3	9	3
3	Atlas can facilitate students in finding concepts	3	4	3	10	3.3
4	Students can associate concepts learned with everyday life	3	3	3	9	3
5	The use of atlases can save the energy of lecturers to write everything to the board	4	4	4	12	4
6	The use of an atlas can make the learning process more effective	4	4	4	12	4
7	The use of an atlas can save lecturer teaching time	4	4	4	12	4
8	Atlas is easily interpreted by lecturers	4	4	4	12	4
9	Atlas has the same equivalence with textbooks so that they can be used as sources in learning	3	3	3	9	3
10	Atlas is a variation of learning resources	4	4	4	12	4
	Total	36	37	36		36.3
	Average	3.6	3.7	3.6		3.63
	Average (%)					90.83
	Category				**Very practical**	

Table 2: Practicality Assessment Based on theConstructivist Oriented Atlas by Students

No	Practical Variables	Indicator	Indicators (%)	Category
1	Ease in usage of student	1. Students can easily store learning material with atlas media 2. Atlasmedia can be used by students at any time 3. Students easily accept and understand plant anatomy material 4. Through the media atlas, students are easier to find learning concepts	86.68%	Practical
2	The time needed in implementing the	The time provided for using media is enough	91.99 %	Very Practical
Average			89.3%	Practical

From the results of the lecturer and student questionnaire analysis (Tables 1 and 2) it was found that the atlas oriented constructivism in the course of Plant Anatomy was categorized as very practical in its use in the lecture process. This means that the developed atlas media can help and facilitate the lecturer in providing the correct explanation of the concepts in the material of Plant Anatomy for students. In contrast to the results of Megahati and Yanti's research, 2018 shows the practicality of student

worksheets based on mastery learning in sex-linked. Subjects are on practical criteria. Likewise with the Development of student workbook based on Mastery learning in Genetics subject with practical (Megahati and Yanti, 2017). Developing an entrepreneurship module with a very practical category (Yulastri et al., 2017). This is in line with the opinion of (Arsyad, 2011) which suggests that the function of learning media is to explain the presence of messages and information so as to accelerate and improve the learning process, learning media can improve and direct the student's attention so as to generate student learning motivation.

4. Recommendations

This research will continue with the effectiveness and disseminate the stage at other universities.

5. Conclusion

The results showed that media-oriented atlas constructivism in subjects classified Plant Anatomy practical use of faculty and students.

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